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 Rothman-Denes, Lucia B.
 Dahl, Gary A.
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Lys His Ala Ala Asp Gly Arg Ile Lys Leu Asn Asn Arg Gln Ile Ala Ala Leu Gln Asn Ala Ala Ala Ile Leu Lys Gly Ala Arg Glu Tyr Asp Ala Glu Ala Arg Leu Gly Leu Arg Pro Gln Asp Ile Val Ser Lys Gln Ile Lys Thr Asp Glu Ser Arg Thr Gln Glu Gly Gln Tyr Ser Ala Leu Gln His Ala Asn Arg Ile Arg Ser Ala Tyr Asn Ser Gly Asn Phe Glu Leu Ala Ser Ala Tyr Leu Asn Asp Phe Met Gln Phe Ala Gln His Met Gln Asn Lys Val Gly Ala Leu Asn Glu His Leu Val Thr Gly Asn Ala Asp Lys Asn Lys Ser Val His Tyr Gln Ala Leu Thr Ala Asp Arg Glu Trp Val Arg Ser Arg Thr Gly Leu Gly Val Asn Pro Tyr Asp Thr Lys Ser Val Lys Phe Ala Gln Gln Val Ala Leu Glu Ala Lys Thr Val Ala Asp Ile Ala Asn Ala Leu Ala Ser Ala Tyr Pro Glu Leu Lys Val Ser His Ile Lys Val Thr Pro Leu Asp Ser Arg Leu Asn Ala Pro Ala Ala Glu Val Val Lys Ala Phe Arq Gln Gly Asn Arq Asp Val Ala Ser Ser Gln Pro Lys Ala Asp Ser Val Asn Gln Val Lys Glu Thr Pro Val Thr Lys Gln Glu Pro Val Thr Ser Thr Val Gln Thr Lys Thr Pro Val Ser Glu Ser Val Lys Thr Glu Pro Thr Thr Lys Glu Ser Ser Pro Gln

Page 12

Ala Ile Lys Glu Pro Val Asn Gln Ser Glu Lys Gln Asp Val Asn Leu

Thr Asn Glu Asp Asn Ile Lys Gln Pro Thr Glu Ser Val Lys Glu Thr

Glu Thr Ser Thr Lys Glu Ser Thr Val Thr Glu Glu Leu Lys Glu Gly

Ile Asp Ala Val Tyr Pro Ser Leu Val Gly Thr Ala Asp Ser Lys Ala

Glu Gly Ile Lys Asn Tyr Phe Lys Leu Ser Phe Thr Leu Pro Glu Glu

Gln Lys Ser Arg Thr Val Gly Ser Glu Ala Pro Leu Lys Asp Val Ala

Gln Ala Leu Ser Ser Arg Ala Arg Tyr Glu Leu Phe Thr Glu Lys Glu

Thr Ala Asn Pro Ala Phe Asn Gly Glu Val Ile Lys Arg Tyr Lys Glu

Leu Met Glu His Gly Glu Gly Ile Ala Asp Ile Leu Arg Ser Arg Leu

Ala Lys Phe Leu Asn Thr Lys Asp Val Gly Lys Arg Phe Ala Gln Gly

Thr Glu Ala Asn Arg Trp Val Gly Gly Lys Leu Leu Asn Ile Val Glu

Gln Asp Gly Asp Thr Phe Lys Tyr Asn Glu Gln Leu Leu Gln Thr Ala

Val Leu Ala Gly Leu Gln Trp Arg Leu Thr Ala Thr Ser Asn Thr Ala

Ile Lys Asp Ala Lys Asp Val Ala Ala Ile Thr Gly Ile Asp Gln Ala

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Thr Glu Ala Val Ser Ser Leu Ala Gln Lys Ile Glu Ser Tyr Trp Gly Page 13

Epicentre-00005 seqlist (Nov).txt 1205 1210 1215

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 1220 1225 1230
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- Val Val Glu Asn Ile Val Asp Met Ser Glu Ile Asp Pro Asp Asn Lys 1250 1255 1260
- Lys Thr Ile Gly Leu Tyr Thr Ile Thr Glu Leu Asp Ser Phe Asp Pro 1265 1270 1275 1280
- Ile Asn Ser Phe Pro Thr Ala Ile Glu Glu Ala Val Leu Val Asn Pro 1285 1290 1295
- Thr Glu Lys Met Phe Phe Gly Asp Asp Ile Pro Pro Val Ala Asn Thr
 1300 1305 1310
- Gln Leu Arg Asn Pro Ala Val Arg Asn Thr Pro Glu Gln Lys Ala Ala 1315 1320 1325
- Leu Lys Ala Glu Gln Ala Thr Glu Phe Tyr Val His Thr Pro Met Val 1330 1335 1340
- Gln Phe Tyr Glu Thr Leu Gly Lys Asp Arg Ile Leu Glu Leu Met Gly 1345 1350 1355 1360
- Ala Gly Thr Leu Asn Lys Glu Leu Leu Asn Asp Asn His Ala Lys Ser 1365 1370 1375
- Leu Glu Gly Lys Asn Arg Ser Val Glu Asp Ser Tyr Asn Gln Leu Phe 1380 1385 1390
- Ser Val Ile Glu Gln Val Arg Ala Gln Ser Glu Asp Ile Ser Thr Val 1395 1400 1405
- Pro Ile His Tyr Ala Tyr Asn Met Thr Arg Val Gly Arg Met Gln Met 1410 1415 1420
- Leu Gly Lys Tyr Asn Pro Gln Ser Ala Lys Leu Val Arg Glu Ala Ile 1425 1430 1435 1440
- Leu Pro Thr Lys Ala Thr Leu Asp Leu Ser Asn Gln Asn Asn Glu Asp 1445 1450 1455
- Phe Ser Ala Phe Gln Leu Gly Leu Ala Gln Ala Leu Asp Ile Lys Val Page 14

Epicentre-00005 seqlist (Nov).txt 1460 1465 1470

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- Glu Gly Asn Leu Lys Pro Ala Ile Asp Met Met Val Glu Phe Asn Thr 1490 1495 1500
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- Arg Tyr Leu Val Ala Glu Asp Lys Ser Ala Phe Val Thr Pro Leu Tyr
 1540 1545 1550
- Val Glu Ala Asp Gly Val Thr Asn Gly Pro Ile Asn Ala Met Met Leu 1555 1560 1565
- Met Thr Gly Gly Leu Phe Thr Pro Asp Trp Ile Arg Asn Ile Ala Lys 1570 1575 1580
- Gly Gly Leu Phe Ile Gly Ser Pro Asn Lys Thr Met Asn Glu His Arg 1585 1590 1595 1600
- Ser Thr Ala Asp Asn Asn Asp Leu Tyr Gln Ala Ser Thr Asn Ala Leu 1605 1610 1615
- Met Glu Ser Leu Gly Lys Leu Arg Ser Asn Tyr Ala Ser Asn Met Pro 1620 1630
- Ile Gln Ser Gln Ile Asp Ser Leu Leu Ser Leu Met Asp Leu Phe Leu 1635 1640 1645
- Pro Asp Ile Asn Leu Gly Glu Asn Gly Ala Leu Glu Leu Lys Arg Gly 1650 1660
- Ile Ala Lys Asn Pro Leu Thr Ile Thr Ile Tyr Gly Ser Gly Ala Arg 1665 1670 1675 1680
- Gly Ile Ala Gly Lys Leu Val Ser Ser Val Thr Asp Ala Ile Tyr Glu 1685 1690 1695
- Arg Met Ser Asp Val Leu Lys Ala Arg Ala Lys Asp Pro Asn Ile Ser 1700 1705 1710
- Ala Ala Met Ala Met Phe Gly Lys Gln Ala Ala Ser Glu Ala His Ala Page 15

Glu Glu Leu Leu Ala Arg Phe Leu Lys Asp Met Glu Thr Leu Thr Ser 1730 1735 1740

1715

Thr Val Pro Val Lys Arg Lys Gly Val Leu Glu Leu Gln Ser Thr Gly 1745 1750 1755 1760

Thr Gly Ala Lys Gly Lys Ile Asn Pro Lys Thr Tyr Thr Ile Lys Gly 1765 1770 1775

Glu Gln Leu Lys Ala Leu Gln Glu Asn Met Leu His Phe Phe Val Glu 1780 1785 1790

Pro Leu Arg Asn Gly Ile Thr Gln Thr Val Gly Glu Ser Leu Val Tyr 1795 1800 1805

Ser Thr Glu Gln Leu Gln Lys Ala Thr Gln Ile Gln Ser Val Val Leu 1810 1815 1820

Glu Asp Met Phe Lys Gln Arg Val Gln Glu Lys Leu Ala Glu Lys Ala 1825 1830 1835 1840

Lys Asp Pro Thr Trp Lys Lys Gly Asp Phe Leu Thr Gln Lys Glu Leu 1845 1850 1855

Asn Asp Ile Gln Ala Ser Leu Asn Asn Leu Ala Pro Met Ile Glu Thr 1860 1865 1870

Gly Ser Gln Thr Phe Tyr Ile Ala Gly Ser Glu Asn Ala Glu Val Ala 1875 1880 1885

Asn Gln Val Leu Ala Thr Asn Leu Asp Asp Arg Met Arg Val Pro Met 1890 1895 1900

Ser Ile Tyr Ala Pro Ala Gln Ala Gly Val Ala Gly Ile Pro Phe Met 1905 1910 1915 1920

Thr Ile Gly Thr Gly Asp Gly Met Met Met Gln Thr Leu Ser Thr Met 1925 1930 1935

Lys Gly Ala Pro Lys Asn Thr Leu Lys Ile Phe Asp Gly Met Asn Ile 1940 1945 1950

Gly Leu Asn Asp Ile Thr Asp Ala Ser Arg Lys Ala Asn Glu Ala Val 1955 1960 1965

Tyr Thr Ser Trp Gln Gly Asn Pro Ile Lys Asn Val Tyr Glu Ser Tyr

Page 16

Ala Lys Phe Met Lys Asn Val Asp Phe Ser Lys Leu Ser Pro Glu Ala 1985 1990 1995 2000

1970

Leu Glu Ala Ile Gly Lys Ser Ala Leu Glu Tyr Asp Gln Arg Glu Asn 2005 2010 2015

Ala Thr Val Asp Asp Ile Ala Asn Ala Ala Ser Leu Ile Glu Arg Asn 2020 2025 2030

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Lys Val Asn Leu Ser Ile Asp Gln Met Ala Ala Val Gly Ala Pro Tyr 2050 2055 2060

Gln Asn Asn Gly Lys Ile Asp Leu Ser Asn Met Thr Pro Glu Gln Gln 2065 2070 2075 2080

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Ala Lys Ile Ser Asn Leu Pro Ser Thr Gln Ala Ala Thr Leu Ala Glu 2145 2150 2155 2160

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Pro Thr Gln Val Ala Glu Tyr Ala Arg Gln Lys Asn Val Thr Glu Leu 2180 2185 2190

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Thr Asn Phe Asp Asp Lys Thr Ile Tyr Leu Val Ser Pro Ser Met Glu 2210 2215 2220

Thr Leu Ile His Glu Leu Val His Ala Ser Thr Phe Glu Glu Val Tyr Page 17 Ser Phe Tyr Gln Gly Asn Glu Val Ser Pro Thr Ser Lys Gln Ala Ile

Glu Asn Leu Glu Gly Leu Met Glu Gln Phe Arg Ser Leu Asp Ile Ser

Lys Asp Ser Pro Glu Met Arg Glu Ala Tyr Ala Asp Ala Ile Ala Thr

Ile Glu Gly His Leu Ser Asn Gly Phe Val Asp Pro Ala Ile Ser Lys

Ala Ala Ala Leu Asn Glu Phe Met Ala Trp Gly Leu Ala Asn Arg Ala

Leu Ala Ala Lys Gln Lys Arg Thr Ser Ser Leu Val Gln Met Val Lys

Asp Val Tyr Gln Ala Ile Lys Lys Leu Ile Trp Gly Arg Lys Gln Ala

Pro Ala Leu Gly Glu Asp Met Phe Ser Asn Leu Leu Phe Asn Ser Ala

Ile Leu Met Arg Ser Gln Pro Thr Thr Gln Ala Val Ala Lys Asp Gly

Thr Leu Phe His Ser Lys Ala Tyr Gly Asn Asn Glu Arg Leu Ser Gln

Leu Asn Gln Thr Phe Asp Lys Leu Val Thr Asp Tyr Leu Arg Thr Asp

Pro Val Thr Glu Val Glu Arg Arg Gly Asn Val Ala Asn Ala Leu Met

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Epicentre-00005 seqlist (Nov).txt 2485 2490 2495

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- Leu Arg Ser Ile Ile Lys Glu Met Pro Val Pro Lys Ala Asp Lys Lys 2545 2550 2560
- Leu Gly Asn Asp Ile Asp Thr Leu Leu Thr Asn Ala Gly Thr Gln Val 2565 2570 2575
- Met Glu Ser Leu Asn Arg Arg Met Ala Gly Asp Gln Lys Ala Thr Asn 2580 2585 2590
- Val Gln Asp Ser Ile Asp Ala Leu Ser Glu Thr Ile Met Ala Ala 2595 2600 2605
- Leu Lys Arg Glu Ser Phe Tyr Asp Ala Val Ala Thr Pro Thr Gly Asn 2610 2615 2620
- Phe Ile Asp Arg Ala Asn Gln Tyr Val Thr Asp Ser Ile Glu Arg Leu 2625 2630 2635 2640
- Ser Glu Thr Val Ile Glu Lys Ala Asp Lys Val Ile Ala Asn Pro Ser 2645 2650 2655
- Asn Ile Ala Ala Lys Gly Val Ala His Leu Ala Lys Leu Thr Ala Ala 2660 2665 2670
- Ile Ala Ser Glu Lys Gln Gly Glu Ile Val Ala Gln Gly Val Met Thr 2675 2680 2685
- Ala Met Asn Gln Gly Lys Val Trp Gln Pro Phe His Asp Leu Val Asn 2690 2695 2700
- Asp Ile Val Gly Arg Thr Lys Thr Asn Ala Asn Val Tyr Asp Leu Ile 2705 2710 2715 2720
- Lys Leu Val Lys Ser Gln Ile Ser Gln Asp Arg Gln Gln Phe Arg Glu 2725 2730 2735
- His Leu Pro Thr Val Ile Ala Gly Lys Phe Ser Arg Lys Leu Thr Asp Page 19

Thr Glu Trp Ser Ala Met His Thr Gly Leu Gly Lys Thr Asp Leu Ala 2755 2760 2765

2740

- Val Leu Arg Glu Thr Met Ser Met Ala Glu Ile Arg Asp Leu Leu Ser 2770 2775 2780
- Ser Ser Lys Lys Val Lys Asp Glu Ile Ser Thr Leu Glu Lys Glu Ile 2785 2790 2795 2800
- Gln Asn Gln Ala Gly Arg Asn Trp Asn Leu Val Gln Lys Lys Ser Lys 2805 2810 2815
- Gln Leu Ala Gln Tyr Met Ile Met Gly Glu Val Gly Asn Asn Leu Leu 2820 2825 2830
- Arg Asn Ala His Ala Ile Ser Arg Leu Leu Gly Glu Arg Ile Thr Asn 2835 2840 2845
- Gly Pro Val Ala Asp Val Ala Ala Ile Asp Lys Leu Ile Thr Leu Tyr 2850 2855 2860
- Ser Leu Glu Leu Met Asn Lys Ser Asp Arg Asp Leu Leu Ser Glu Leu 2865 2870 2875 2880
- Ala Gln Ser Glu Val Glu Gly Met Glu Phe Ser Ile Ala Tyr Met Val 2885 2890 2895
- Gly Gln Arg Thr Glu Glu Met Arg Lys Ala Lys Gly Asp Asn Arg Thr 2900 2905 2910
- Leu Leu Asn His Phe Lys Gly Tyr Ile Pro Val Glu Asn Gln Gln Gly
 2915 2920 2925
- Val Asn Leu Ile Ile Ala Asp Asp Lys Glu Phe Ala Lys Leu Asn Ser 2930 2935 2940
- Gln Ser Phe Thr Arg Ile Gly Thr Tyr Gln Gly Ser Thr Gly Phe Arg 2945 2950 2955 2960
- Thr Gly Ser Lys Gly Tyr Tyr Phe Ser Pro Val Ala Ala Arg Ala Pro 2965 2970 2975
- Tyr Ser Gln Gly Ile Leu Gln Asn Val Arg Asn Thr Ala Gly Gly Val 2980 2985 2990
- Asp Ile Gly Thr Gly Phe Thr Leu Gly Thr Met Val Ala Gly Arg Ile
 Page 20

Thr Asp Lys Pro Thr Val Glu Arg Ile Thr Lys Ala Leu Ala Lys Gly 3010 3015 3020

2995

- Glu Arg Gly Arg Glu Pro Leu Met Pro Ile Tyr Asn Ser Lys Gly Gln 3025 3030 3035 3040
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- Gln Val Glu Glu Ala Lys Ala Gln Arg Phe Asn Asp Ile Leu Ile Glu 3075 3080 3085
- Gln Leu His Ala Met Tyr Glu Lys Asp Ile Lys Asp Ser Ser Ala Asn 3090 3095 3100
- Lys Ser Gln Tyr Val Asn Leu Leu Gly Lys Ile Asp Asp Pro Val Leu 3105 3110 3115 3120
- Ala Asp Ala Ile Asn Leu Met Asn Ile Glu Thr Arg His Lys Ala Glu 3125 3130 3135
- Glu Leu Phe Gly Lys Asp Glu Leu Trp Val Arg Arg Asp Met Leu Asn 3140 3145 3150
- Asp Ala Leu Gly Tyr Arg Ala Ala Ser Ile Gly Asp Val Trp Thr Gly 3155 3160 3165
- Asn Ser Arg Trp Ser Pro Ser Thr Leu Asp Thr Val Lys Lys Met Phe 3170 3175 3180
- Leu Gly Ala Phe Gly Asn Lys Ala Tyr His Val Val Met Asn Ala Glu 3185 3190 3195 3200
- Asn Thr Ile Gln Asn Leu Val Lys Asp Ala Lys Thr Val Ile Val Val 3205 3210 3215
- Lys Ser Val Val Pro Ala Val Asn Phe Leu Ala Asn Ile Tyr Gln 3220 3225 3230
- Met Ile Gly Arg Gly Val Pro Val Lys Asp Ile Ala Val Asn Ile Pro 3235 3240 3245
- Arg Lys Thr Ser Glu Ile Asn Gln Tyr Ile Lys Ser Arg Leu Arg Gln
 Page 21

Ile Asp	Ala	Glu	Ala	Glu	Leu	Arg	Ala	Ala	Glu	Gly	Asn	Pro	Asn	Leu
3265			:	3270				3	3275					3280

3250

- Val Arg Lys Leu Lys Thr Glu Ile Gln Ser Ile Thr Asp Ser His Arg 3285 3290 3295
- Arg Met Ser Ile Trp Pro Leu Ile Glu Ala Gly Glu Phe Ser Ser Ile 3300 3305 3310
- Ala Asp Ala Gly Ile Ser Arg Asp Asp Leu Leu Val Ala Glu Gly Lys 3315 3320 3325
- Ile His Glu Tyr Met Glu Lys Leu Ala Asn Lys Leu Pro Glu Lys Val 3330 3335 3340
- Arg Asn Ala Gly Arg Tyr Ala Leu Ile Ala Lys Asp Thr Ala Leu Phe 3345 3350 3360
- Gln Gly Ile Gln Lys Thr Val Glu Tyr Ser Asp Phe Ile Ala Lys Ala 3365 3370 3375
- Ile Ile Tyr Asp Asp Leu Val Lys Arg Lys Lys Ser Ser Ser Glu
 3380 3385 3390
- Ala Leu Gly Gln Val Thr Glu Glu Phe Ile Asn Tyr Asp Arg Leu Pro 3395 3400 3405
- Gly Arg Phe Arg Gly Tyr Met Glu Ser Met Gly Leu Met Trp Phe Tyr 3410 3415 3420
- Asn Phe Lys Ile Arg Ser Ile Lys Val Ala Met Ser Met Ile Arg Asn 3425 3430 3435 3440
- Asn Pro Val His Ser Leu Ile Ala Thr Val Val Pro Ala Pro Thr Met 3445 3450 3455
- Phe Gly Asn Val Gly Leu Pro Ile Gln Asp Asn Met Leu Thr Met Leu 3460 3465 3470
- Ala Glu Gly Arg Leu Asp Tyr Ser Leu Gly Phe Gly Gln Gly Leu Arg 3475 3480 3485
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<213> Artificial Sequence

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20 25 30

Asn Tyr Phe Lys Leu Ser Phe Thr Leu Pro Glu Glu Gln Lys Ser Arg 35 40 45

Thr Val Gly Ser Glu Ala Pro Leu Lys Asp Val Ala Gln Ala Leu Ser Page 25

Ser Arg Ala Arg Tyr Glu Leu Phe Thr Glu Lys Glu Thr Ala Asn Pro Ala Phe Asn Gly Glu Val Ile Lys Arg Tyr Lys Glu Leu Met Glu His Gly Glu Gly Ile Ala Asp Ile Leu Arg Ser Arg Leu Ala Lys Phe Leu Asn Thr Lys Asp Val Gly Lys Arg Phe Ala Gln Gly Thr Glu Ala Asn Arg Trp Val Gly Gly Lys Leu Leu Asn Ile Val Glu Gln Asp Gly Asp Thr Phe Lys Tyr Asn Glu Gln Leu Leu Gln Thr Ala Val Leu Ala Gly Leu Gln Trp Arg Leu Thr Ala Thr Ser Asn Thr Ala Ile Lys Asp Ala Lys Asp Val Ala Ala Ile Thr Gly Ile Asp Gln Ala Leu Leu Pro Glu Gly Leu Val Glu Gln Phe Asp Thr Gly Met Thr Leu Thr Glu Ala Val Ser Ser Leu Ala Gln Lys Ile Glu Ser Tyr Trp Gly Leu Ser Arg Asn Pro Asn Ala Pro Leu Gly Tyr Thr Lys Gly Ile Pro Thr Ala Met Ala Ala Glu Ile Leu Ala Ala Phe Val Glu Ser Thr Asp Val Val Glu Asn Ile Val Asp Met Ser Glu Ile Asp Pro Asp Asn Lys Lys Thr Ile Gly Leu Tyr Thr Ile Thr Glu Leu Asp Ser Phe Asp Pro Ile Asn Ser Phe Pro Thr Ala Ile Glu Glu Ala Val Leu Val Asn Pro Thr Glu Lys Met

Phe Phe Gly Asp Asp Ile Pro Pro Val Ala Asn Thr Gln Leu Arg Asn Page 26

305				E	310	ntre	-000	05 s	edīī	st (315	NOV)	.txt			320
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Thr	Leu	Gly 355	Lys	Asp	Arg	Ile	Leu 360	Glu	Leu	Met	Gly	Ala 365	Gly	Thr	Leu
Asn	Lys 370	Glu	Leu	Leu	Asn	Asp 375	Asn	His	Ala	Lys	Ser 380	Leu	Glu	Gly	Lys
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Gln	Val	Arg	Ala	Gln 405	Ser	Glu	Asp	Ile	Ser 410	Thr	Val	Pro	Ile	His 415	Tyr
Ala	Tyr	Asn	Met 420	Thr	Arg	Val	Gly	Arg 425	Met	Gln	Met	Leu	Gly 430	Lys	Tyr
Asn	Pro	Gln 435	Ser	Ala	Lys	Leu	Val 440	Arg	Glu	Ala	Ile	Leu 445	Pro	Thr	Lys
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Gln 465	Leu	Gly	Leu	Ala	Gln 470	Ala	Leu	Asp	Ile	Lys 475	Val	His	Thr	Met	Thr 480
Arg	Glu	Val	Met	Ser 485	Asp	Glu	Leu	Thr	Lys 490	Leu	Leu	Glu	Gly	Asn 495	Leu
Lys	Pro	Ala	Ile 500	Asp	Met	Met	Val	Glu 505	Phe	Asn	Thr	Thr	Gly 510	Ser	Leu
Pro	Glu	Asn 515	Ala	Val	Asp	Val	Leu 520	Asn	Thr	Ala	Leu	Gly 525	Asp	Arg	Lys
Ser	Phe 530	Val	Ala	Leu	Met	Ala 535	Leu	Met	Glu	Tyr	Ser 540	Arg	Tyr	Leu	Val
Ala 545	Glu	Asp	Lys	Ser	Ala 550	Phe	Val	Thr	Pro	Leu 555	Tyr	Val	Glu	Ala	Asp 560
Gly	Val	Thr	Asn	Gly	Pro	Ile		Ala		Met	Leu	Met	Thr	Gly	Gly
								Page	21						

Leu Phe Thr Pro Asp Trp Ile Arg Asn Ile Ala Lys Gly Gly Leu Phe Ile Gly Ser Pro Asn Lys Thr Met Asn Glu His Arg Ser Thr Ala Asp Asn Asn Asp Leu Tyr Gln Ala Ser Thr Asn Ala Leu Met Glu Ser Leu Gly Lys Leu Arg Ser Asn Tyr Ala Ser Asn Met Pro Ile Gln Ser Gln Ile Asp Ser Leu Leu Ser Leu Met Asp Leu Phe Leu Pro Asp Ile Asn Leu Gly Glu Asn Gly Ala Leu Glu Leu Lys Arg Gly Ile Ala Lys Asn Pro Leu Thr Ile Thr Ile Tyr Gly Ser Gly Ala Arg Gly Ile Ala Gly Lys Leu Val Ser Ser Val Thr Asp Ala Ile Tyr Glu Arg Met Ser Asp Val Leu Lys Ala Arg Ala Lys Asp Pro Asn Ile Ser Ala Ala Met Ala Met Phe Gly Lys Gln Ala Ala Ser Glu Ala His Ala Glu Glu Leu Leu Ala Arg Phe Leu Lys Asp Met Glu Thr Leu Thr Ser Thr Val Pro Val Lys Arg Lys Gly Val Leu Glu Leu Gln Ser Thr Gly Thr Gly Ala Lys Gly Lys Ile Asn Pro Lys Thr Tyr Thr Ile Lys Gly Glu Gln Leu Lys Ala Leu Gln Glu Asn Met Leu His Phe Phe Val Glu Pro Leu Arg Asn Gly Ile Thr Gln Thr Val Gly Glu Ser Leu Val Tyr Ser Thr Glu Gln Leu Gln Lys Ala Thr Gln Ile Gln Ser Val Val Leu Glu Asp Met Phe

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	820		C 000	825	-411	, 20	110 7	·crc	830		
Lys Gln Arg 835	Val Gla	n Glu Ly:	s Leu 840	Ala	Glu	Lys	Ala	Lys 845	Asp	Pro	Thr
Trp Lys Lys 850	Gly As	Phe Le		Gln	Lys	Glu	Leu 860	Asn	Asp	Ile	Gln
Ala Ser Leu 865	Asn Ası	n Leu Ala 870	a Pro	Met	Ile	Glu 875	Thr	Gly	Ser	Gln	Thr 880
Phe Tyr Ile	Ala Gly	•	ı Asn	Ala	Glu 890	Val	Ala	Asn	Gln	Val 895	Leu
Ala Thr Asn	Leu As _] 900	o Asp Ar	g Met	Arg 905	Val	Pro	Met	Ser	Ile 910	Tyr	Ala
Pro Ala Gln 915	Ala Gl	y Val Ala	a Gly 920	Ile	Pro	Phe	Met	Thr 925	Ile	Gly	Thr
Gly Asp Gly 930	Met Met	Met Gli 93		Leu	Ser	Thr	Met 940	Lys	Gly	Ala	Pro
Lys Asn Thr 945	Leu Ly	s Ile Pho 950	e Asp	Gly	Met	Asn 955	Ile	Gly	Leu	Asn	Asp 960
Ile Thr Asp	Ala Se: 96!		s Ala	Asn	Glu 970	Ala	Val	Tyr	Thr	Ser 975	Trp
Gln Gly Asn	Pro Ile 980	e Lys Ası	n Val	Tyr 985	Glu	Ser	Tyr	Ala	Lys 990	Phe	Met
Lys Asn Val 995	Asp Phe	e Ser Ly	Leu 1000	Ser	Pro	Glu		Leu L005	Glu	Ala	Ile
Gly Lys Ser 1010	Ala Lei	ı Glu Ty: 101	_	Gln	Arg		Asn L020	Ala	Thr	Val	Asp
Asp Ile Ala 1025	Asn Ala	a Ala Se: 1030	r Leu	Ile		Arg L035	Asn	Leu	Arg		Ile 1040
Ala Leu Gly	Val Ası 104		g His	_	Val L050	Leu	Asp	Lys		Asn 1055	Leu
Ser Ile Asp	Gln Met 1060	: Ala Ala		Gly 1065	Ala	Pro	Tyr		Asn L070	Asn	Gly
Lys Ile Asp	Leu Se	Asn Me	: Thr	Pro	Glu	Gln	Gln	Ala	Asp	Glu	Leu

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Epicentre-00005 seqlist (Nov).txt 1075 1080 1085

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Lys Ala Arg 1105

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<211> 3432

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Primer

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<210> 6 <211> 1143 <212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

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Epicentre-00005 seglist (Nov).txt Thr Glu Ala Val Ser Ser Leu Ala Gln Lys Ile Glu Ser Tyr Trp Gly Leu Ser Arg Asn Pro Asn Ala Pro Leu Gly Tyr Thr Lys Gly Ile Pro Thr Ala Met Ala Ala Glu Ile Leu Ala Ala Phe Val Glu Ser Thr Asp Val Val Glu Asn Ile Val Asp Met Ser Glu Ile Asp Pro Asp Asn Lys Lys Thr Ile Gly Leu Tyr Thr Ile Thr Glu Leu Asp Ser Phe Asp Pro Ile Asn Ser Phe Pro Thr Ala Ile Glu Glu Ala Val Leu Val Asn Pro Thr Glu Lys Met Phe Phe Gly Asp Asp Ile Pro Pro Val Ala Asn Thr Gln Leu Arg Asn Pro Ala Val Arg Asn Thr Pro Glu Gln Lys Ala Ala Leu Lys Ala Glu Gln Ala Thr Glu Phe Tyr Val His Thr Pro Met Val Gln Phe Tyr Glu Thr Leu Gly Lys Asp Arg Ile Leu Glu Leu Met Gly Ala Gly Thr Leu Asn Lys Glu Leu Leu Asn Asp Asn His Ala Lys Ser Leu Glu Gly Lys Asn Arg Ser Val Glu Asp Ser Tyr Asn Gln Leu Phe Ser Val Ile Glu Gln Val Arq Ala Gln Ser Glu Asp Ile Ser Thr Val Pro Ile His Tyr Ala Tyr Asn Met Thr Arg Val Gly Arg Met Gln Met Leu Gly Lys Tyr Asn Pro Gln Ser Ala Lys Leu Val Arg Glu Ala Ile Leu Pro Thr Lys Ala Thr Leu Asp Leu Ser Asn Gln Asn Asn Glu Asp

Epicentre-00005 seglist (Nov).txt Phe Ser Ala Phe Gln Leu Gly Leu Ala Gln Ala Leu Asp Ile Lys Val His Thr Met Thr Arg Glu Val Met Ser Asp Glu Leu Thr Lys Leu Leu Glu Gly Asn Leu Lys Pro Ala Ile Asp Met Met Val Glu Phe Asn Thr Thr Gly Ser Leu Pro Glu Asn Ala Val Asp Val Leu Asn Thr Ala Leu Gly Asp Arg Lys Ser Phe Val Ala Leu Met Ala Leu Met Glu Tyr Ser Arg Tyr Leu Val Ala Glu Asp Lys Ser Ala Phe Val Thr Pro Leu Tyr Val Glu Ala Asp Gly Val Thr Asn Gly Pro Ile Asn Ala Met Met Leu Met Thr Gly Gly Leu Phe Thr Pro Asp Trp Ile Arg Asn Ile Ala Lys Gly Gly Leu Phe Ile Gly Ser Pro Asn Lys Thr Met Asn Glu His Arq Ser Thr Ala Asp Asn Asn Asp Leu Tyr Gln Ala Ser Thr Asn Ala Leu Met Glu Ser Leu Gly Lys Leu Arg Ser Asn Tyr Ala Ser Asn Met Pro Ile Gln Ser Gln Ile Asp Ser Leu Leu Ser Leu Met Asp Leu Phe Leu Pro Asp Ile Asn Leu Gly Glu Asn Gly Ala Leu Glu Leu Lys Arg Gly Ile Ala Lys Asn Pro Leu Thr Ile Thr Ile Tyr Gly Ser Gly Ala Arg Gly Ile Ala Gly Lys Leu Val Ser Ser Val Thr Asp Ala Ile Tyr Glu Arg Met Ser Asp Val Leu Lys Ala Arg Ala Lys Asp Pro Asn Ile Ser

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Tyr Thr Ser Trp Gln Gly Asn Pro Ile Lys Asn Val Tyr Glu Ser Tyr 1010 1015 1020

Ala Lys Phe Met Lys Asn Val Asp Phe Ser Lys Leu Ser Pro Glu Ala 1025 1030 1035 1040

Leu Glu Ala Ile Gly Lys Ser Ala Leu Glu Tyr Asp Gln Arg Glu Asn 1045 1050 1055

Ala Thr Val Asp Asp Ile Ala Asn Ala Ala Ser Leu Ile Glu Arg Asn 1060 1065 1070

Leu Arg Asn Ile Ala Leu Gly Val Asp Ile Arg His Lys Val Leu Asp 1075 1080 1085

Lys Val Asn Leu Ser Ile Asp Gln Met Ala Ala Val Gly Ala Pro Tyr 1090 1095 1100

Gln Asn Asn Gly Lys Ile Asp Leu Ser Asn Met Thr Pro Glu Gln Gln 1105 1110 1115 1120

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<211> 3432

<212> DNA

<213> Artificial Sequence

<220>

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Epicentre-00005 seqlist (Nov).txt
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<211> 1143

<212> PRT

<213> Artificial Sequence

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35 40 45

Ile Asp Ala Val Tyr Pro Ser Leu Val Gly Thr Ala Asp Ser Lys Ala 50 55 60

Glu Gly Ile Lys Asn Tyr Phe Lys Leu Ser Phe Thr Leu Pro Glu Glu 65 70 75 80

Gln Lys Ser Arg Thr Val Gly Ser Glu Ala Pro Leu Lys Asp Val Ala 85 90 95

Gln Ala Leu Ser Ser Arg Ala Arg Tyr Glu Leu Phe Thr Glu Lys Glu
100 105 110

Thr Ala Asn Pro Ala Phe Asn Gly Glu Val Ile Lys Arg Tyr Lys Glu 115 120 125

Leu Met Glu His Gly Glu Gly Ile Ala Asp Ile Leu Arg Ser Arg Leu 130 135 140

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Thr	Ala	Met 275	Ala	Ala	Glu	Ile	Leu 280	Ala	Ala	Phe	Val	Glu 285	Ser	Thr	Asp
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Thr	Glu	Lys	Met 340	Phe	Phe	Gly	Asp	Asp 345	Ile	Pro	Pro	Val	Ala 350	Asn	Thr
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Ser	Val	Ile 435	Glu	Gln	Val	Arg	Ala 440	Gln	Ser	Glu	Asp	Ile 445	Ser	Thr	Val
Pro	Ile 450	His	Tyr	Ala	Tyr	Asn 455	Met	Thr	Arg	Val	Gly 460	Arg	Met	Gln	Met
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His	Thr	Met 515	Thr	Arg	Glu	Val	Met 520	Ser	Asp	Glu	Leu	Thr 525	Lys	Leu	Leu
Glu	Gly 530	Asn	Leu	Lys	Pro	Ala 535	Ile	Asp	Met	Met	Val 540	Glu	Phe	Asn	Thr
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Asp Ser Val Thr Asn Ala Lys Gln Val Asp Val Ser Thr Ala Thr Ala 50 55 60

Gln Lys Lys Ala Glu Gln Gly Val Thr Thr Pro Leu Val Ser Pro Asp 65 70 75 80

Ala Ala Tyr Gln Met Gln Ala Ala Arg Thr Gly Asn Val Gly Ala Asn
85 90 95

Ala Phe Glu Pro Gly Thr Val Gln Ser Asp Phe Met Asn Leu Thr Pro 100 105 110

Met Gln Ile Met Asn Lys Tyr Gly Val Glu Gln Gly Leu Gln Leu Ile 115 120 125

Asn Ala Arg Ala Asp Ala Gly Asn Gln Val Phe Asn Asp Ser Val Thr
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Thr 145	Arg	Thr	Pro	Gly	Glu 150	Glu	Leu	Gly	Asp	Ile 155	Ala	Thr	Gly	Val	Gly 160
Leu	Gly	Phe	Val	Asn 165	Thr	Leu	Gly	Gly	Ile 170	Gly	Ala	Leu	Gly	Ala 175	Gly
Leu	Leu	Asn	Asp 180	Asp	Ala	Gly	Ala	Val 185	Val	Ala	Gln	Gln	Leu 190	Ser	Lys
Phe	Asn	Asp 195	Ala	Val	His	Ala	Thr 200	Gln	Ser	Gln	Ala	Leu 205	Gln	Asp	Lys
Arg	Lys 210	Leu	Phe	Ala	Ala	Arg 215	Asn	Leu	Met	Asn	Glu 220	Val	Glu	Ser	Glu
Arg 225	Gln	Tyr	Gln	Thr	Asp 230	Lys	Lys	Glu	Gly	Thr 235	Asn	Asp	Ile	Val	Ala 240
Ser	Leu	Ser	Lys	Phe 245	Gly	Arg	Asp	Phe	Val 250	Gly	Ser	Ile	Glu	Asn 255	Ala
Ala	Gln	Thr	Asp 260	Ser	Ile	Ile	Ser	Asp 265	Gly	Leu	Ala	Glu	Gly 270	Val	Gly
Ser	Leu	Leu 275	Gly	Ala	Gly	Pro	Val 280	Leu	Arg	Gly	Ala	Ser 285	Leu	Leu	Gly
Lys	Ala 290	Val	Val	Pro	Ala	Asn 295	Thr	Leu	Arg	Ser	Ala 300	Ala	Leu	Ala	Gly
Ala 305	Ile	Asp	Ala	Gly	Thr 310	Gly	Thr	Gln	Ser	Leu 315	Ala	Arg	Ile	Ala	Ser 320
Thr	Val	Gly	Arg	Ala 325	Ala	Pro	Gly	Met	Val 330	Gly	Val	Gly	Ala	Met 335	Glu
Ala	Gly	Gly	Ala 340	Tyr	Gln	Gln	Thr	Ala 345	Asp	Glu	Ile	Met	Lys 350	Met	Ser
Leu	Lys	Asp 355	Leu	Glu	Lys	Ser	Pro 360	Val	Tyr	Gln	Gln	His 365	Ile	Lys	Asp
Gly	Met 370	Ser	Pro	Glu	Gln	Ala 375	Arg	Arg	Gln	Thr	Ala 380	Ser	Glu	Thr	Gly
Leu	Thr	Ala	Ala	Ala	Ile	Gln		Pro Page		Ala	Ala	Ala	Thr	Gly	Pro

Leu Val Ser Arg Phe Glu Met Ala Pro Phe Arg Ala Gly Ser Leu Gly Ala Val Gly Met Asn Leu Ala Arg Glu Thr Val Glu Glu Gly Val Gln Gly Ala Thr Gly Gln Leu Ala Gln Asn Ile Ala Gln Gln Gln Asn Ile Asp Lys Asn Gln Asp Leu Leu Lys Gly Val Gly Thr Gln Ala Gly Leu Gly Ala Leu Tyr Gly Phe Gly Ser Ala Gly Val Val Gln Ala Pro Ala Gly Ala Ala Arg Leu Ala Gly Ala Ala Thr Ala Pro Val Leu Arg Thr Thr Met Ala Gly Val Lys Ala Ala Gly Ser Val Ala Gly Lys Val Val Ser Pro Ile Lys Asn Thr Leu Val Ala Arg Gly Glu Arg Val Met Lys Gln Asn Glu Glu Ala Ser Pro Val Ala Asp Asp Tyr Val Ala Gln Ala Ala Gln Glu Ala Met Ala Gln Ala Pro Glu Ala Glu Val Thr Ile Arg Asp Ala Val Glu Ala Thr Asp Ala Thr Pro Glu Gln Lys Val Ala Ala His Gln Tyr Val Ser Asp Leu Met Asn Ala Thr Arg Phe Asn Pro Glu Asn Tyr Gln Glu Ala Pro Glu His Ile Arg Asn Ala Val Ala Gly Ser Thr Asp Gln Val Gln Val Ile Gln Lys Leu Ala Asp Leu Val Asn Thr Leu Asp Glu Ser Asn Pro Gln Ala Leu Met Glu Ala Ala Ser Tyr Met Tyr Asp Ala Val Ser Glu Phe Glu Gln Phe Ile Asn Arg Asp Pro Ala

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Ala Leu Asp Ser Ile Pro Lys Asp Ser Pro Ala Ile Glu Leu Leu Asn Arg Tyr Thr Asn Leu Thr Ala Asn Ile Gln Asn Thr Pro Lys Val Ile Gly Ala Leu Asn Val Ile Asn Arg Met Ile Asn Glu Ser Ala Gln Asn Gly Ser Leu Asn Val Thr Glu Glu Ser Ser Pro Gln Glu Met Gln Asn Val Ala Leu Ala Ala Glu Val Ala Pro Glu Lys Leu Asn Pro Glu Ser Val Asn Val Val Leu Lys His Ala Ala Asp Gly Arg Ile Lys Leu Asn Asn Arg Gln Ile Ala Ala Leu Gln Asn Ala Ala Ile Leu Lys Gly Ala Arg Glu Tyr Asp Ala Glu Ala Ala Arg Leu Gly Leu Arg Pro Gln Asp Ile Val Ser Lys Gln Ile Lys Thr Asp Glu Ser Arg Thr Gln Glu Gly Gln Tyr Ser Ala Leu Gln His Ala Asn Arg Ile Arg Ser Ala Tyr Asn Ser Gly Asn Phe Glu Leu Ala Ser Ala Tyr Leu Asn Asp Phe Met Gln Phe Ala Gln His Met Gln Asn Lys Val Gly Ala Leu Asn Glu His Leu Val Thr Gly Asn Ala Asp Lys Asn Lys Ser Val His Tyr Gln Ala Leu Thr Ala Asp Arg Glu Trp Val Arg Ser Arg Thr Gly Leu Gly Val Asn Pro Tyr Asp Thr Lys Ser Val Lys Phe Ala Gln Gln Val Ala Leu Glu Ala Lys Thr Val Ala Asp Ile Ala Asn Ala Leu Ala Ser Ala Tyr

Page 57

Pro Glu Leu Lys Val Ser His Ile Lys Val Thr Pro Leu Asp Ser Arg 915

Leu Asn Ala Pro Ala Ala Glu Val Val Lys Ala Phe Arg Gln Gly Asn 930

900

Arg Asp Val Ala Ser Ser Gln Pro Lys Ala Asp Ser Val Asn Gln Val 945 950 955 960

Lys Glu Thr Pro Val Thr Lys Gln Glu Pro Val Thr Ser Thr Val Gln 965 970 975

Thr Lys Thr Pro Val Ser Glu Ser Val Lys Thr Glu Pro Thr Thr Lys 980 985 990

Glu Ser Ser Pro Gln Ala Ile Lys Glu Pro Val Asn Gln Ser Glu Lys 995 1000 1005

Gln Asp Val Asn Leu Thr Asn Glu Asp Asn Ile Lys Gln Pro Thr Glu 1010 1015 1020

Ser Val Lys Glu Thr Glu Thr Ser Thr Lys Glu Ser Thr Val Thr Glu 1025 1030 1035 1040

Glu Leu Lys Glu Gly Ile Asp Ala Val Tyr Pro Ser Leu Val Gly Thr 1045 1050 1055

Ala Asp Ser Lys Ala Glu Gly Ile Lys Asn Tyr Phe Lys Leu Ser Phe 1060 1065 1070

Thr Leu Pro Glu Glu Gln Lys Ser Arg Thr Val Gly Ser Glu Ala Pro 1075 1080 1085

Leu Lys Asp Val Ala Gln Ala Leu Ser Ser Arg Ala Arg Tyr Glu Leu 1090 1095 1100

Phe Thr Glu Lys Glu Thr Ala Asn Pro Ala Phe Asn Gly Glu Val Ile 1105 1110 1115 1120

Lys Arg Tyr Lys Glu Leu Met Glu His Gly Glu Gly Ile Ala Asp Ile 1125 1130 1135

Leu Arg Ser Arg Leu Ala Lys Phe Leu Asn Thr Lys Asp Val Gly Lys
1140 1145 1150

Arg Phe Ala Gln Gly Thr Glu Ala Asn Arg Trp Val Gly Gly Lys Leu
Page 58

Leu Asn Ile Val Glu Gln Asp Gly Asp Thr Phe Lys Tyr Asn Glu Gln 1170 1175 1180

1155

- Leu Leu Gln Thr Ala Val Leu Ala Gly Leu Gln Trp Arg Leu Thr Ala 1185 1190 1195 1200
- Thr Ser Asn Thr Ala Ile Lys Asp Ala Lys Asp Val Ala Ala Ile Thr 1205 1210 1215
- Gly Ile Asp Gln Ala Leu Leu Pro Glu Gly Leu Val Glu Gln Phe Asp 1220 1225 1230
- Thr Gly Met Thr Leu Thr Glu Ala Val Ser Ser Leu Ala Gln Lys Ile 1235 1240 1245
- Glu Ser Tyr Trp Gly Leu Ser Arg Asn Pro Asn Ala Pro Leu Gly Tyr 1250 1255 1260
- Thr Lys Gly Ile Pro Thr Ala Met Ala Ala Glu Ile Leu Ala Ala Phe 1265 1270 1275 1280
- Val Glu Ser Thr Asp Val Val Glu Asn Ile Val Asp Met Ser Glu Ile 1285 1290 1295
- Asp Pro Asp Asn Lys Lys Thr Ile Gly Leu Tyr Thr Ile Thr Glu Leu 1300 1305 1310
- Asp Ser Phe Asp Pro Ile Asn Ser Phe Pro Thr Ala Ile Glu Glu Ala 1315 1320 1325
- Val Leu Val Asn Pro Thr Glu Lys Met Phe Phe Gly Asp Asp Ile Pro 1330 1335 1340
- Pro Val Ala Asn Thr Gln Leu Arg Asn Pro Ala Val Arg Asn Thr Pro 1345 1350 1355 1360
- Glu Gln Lys Ala Ala Leu Lys Ala Glu Gln Ala Thr Glu Phe Tyr Val 1365 1370 1375
- His Thr Pro Met Val Gln Phe Tyr Glu Thr Leu Gly Lys Asp Arg Ile 1380 1385 1390
- Leu Glu Leu Met Gly Ala Gly Thr Leu Asn Lys Glu Leu Leu Asn Asp 1395 1400 1405
- Asn His Ala Lys Ser Leu Glu Gly Lys Asn Arg Ser Val Glu Asp Ser
  Page 59

Tyr Asn Gln Leu Phe Ser Val Ile Glu Gln Val Arg Ala Gln Ser Glu 1425 1430 1435 1440

1410

Asp Ile Ser Thr Val Pro Ile His Tyr Ala Tyr Asn Met Thr Arg Val 1445 1450 1455

Gly Arg Met Gln Met Leu Gly Lys Tyr Asn Pro Gln Ser Ala Lys Leu 1460 1465 1470

Val Arg Glu Ala Ile Leu Pro Thr Lys Ala Thr Leu Asp Leu Ser Asn 1475 1480 1485

Gln Asn Asn Glu Asp Phe Ser Ala Phe Gln Leu Gly Leu Ala Gln Ala 1490 1495 1500

Leu Asp Ile Lys Val His Thr Met Thr Arg Glu Val Met Ser Asp Glu 1505 1510 1515 1520

Leu Thr Lys Leu Leu Glu Gly Asn Leu Lys Pro Ala Ile Asp Met Met 1525 1530 1535

Val Glu Phe Asn Thr Thr Gly Ser Leu Pro Glu Asn Ala Val Asp Val 1540 1545 1550

Leu Asn Thr Ala Leu Gly Asp Arg Lys Ser Phe Val Ala Leu Met Ala 1555 1560 1565

Leu Met Glu Tyr Ser Arg Tyr Leu Val Ala Glu Asp Lys Ser Ala Phe 1570 1575 1580

Val Thr Pro Leu Tyr Val Glu Ala Asp Gly Val Thr Asn Gly Pro Ile 1585 1590 1595 1600

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Arg Asn Ile Ala Lys Gly Gly Leu Phe Ile Gly Ser Pro Asn Lys Thr 1620 1625 1630

Met Asn Glu His Arg Ser Thr Ala Asp Asn Asn Asp Leu Tyr Gln Ala 1635 1640 1645

Ser Thr Asn Ala Leu Met Glu Ser Leu Gly Lys Leu Arg Ser Asn Tyr 1650 1655 1660

Ala Ser Asn Met Pro Ile Gln Ser Gln Ile Asp Ser Leu Leu Ser Leu Page 60 Met Asp Leu Phe Leu Pro Asp Ile Asn Leu Gly Glu Asn Gly Ala Leu 1685 1690 1695

Glu Leu Lys Arg Gly Ile Ala Lys Asn Pro Leu Thr Ile Thr Ile Tyr 1700 1705 1710

Gly Ser Gly Ala Arg Gly Ile Ala Gly Lys Leu Val Ser Ser Val Thr 1715 1720 1725

Asp Ala Ile Tyr Glu Arg Met Ser Asp Val Leu Lys Ala Arg Ala Lys 1730 1735 1740

Asp Pro Asn Ile Ser Ala Ala Met Ala Met Phe Gly Lys Gln Ala Ala 1745 1750 1755 1760

Ser Glu Ala His Ala Glu Glu Leu Leu Ala Arg Phe Leu Lys Asp Met 1765 1770 1775

Glu Thr Leu Thr Ser Thr Val Pro Val Lys Arg Lys Gly Val Leu Glu 1780 1785 1790

Leu Gln Ser Thr Gly Thr Gly Ala Lys Gly Lys Ile Asn Pro Lys Thr 1795 1800 1805

Tyr Thr Ile Lys Gly Glu Gln Leu Lys Ala Leu Gln Glu Asn Met Leu 1810 1815 1820

His Phe Phe Val Glu Pro Leu Arg Asn Gly Ile Thr Gln Thr Val Gly 1825 1830 1835 1840

Glu Ser Leu Val Tyr Ser Thr Glu Gln Leu Gln Lys Ala Thr Gln Ile 1845 1850 1855

Gln Ser Val Val Leu Glu Asp Met Phe Lys Gln Arg Val Gln Glu Lys 1860 1865 1870

Leu Ala Glu Lys Ala Lys Asp Pro Thr Trp Lys Lys Gly Asp Phe Leu 1875 1880 1885

Thr Gln Lys Glu Leu Asn Asp Ile Gln Ala Ser Leu Asn Asn Leu Ala 1890 1895 1900

Pro Met Ile Glu Thr Gly Ser Gln Thr Phe Tyr Ile Ala Gly Ser Glu 1905 1910 1915 1920

Asn Ala Glu Val Ala Asn Gln Val Leu Ala Thr Asn Leu Asp Asp Arg Page 61

1935

Met Arg Val Pro Met Ser Ile Tyr Ala Pro Ala Gln Ala Gly Val Ala 1940 1945 1950

Gly Ile Pro Phe Met Thr Ile Gly Thr Gly Asp Gly Met Met Met Gln
1955 1960 1965

Thr Leu Ser Thr Met Lys Gly Ala Pro Lys Asn Thr Leu Lys Ile Phe 1970 1975 1980

Asp Gly Met Asn Ile Gly Leu Asn Asp Ile Thr Asp Ala Ser Arg Lys 1985 1990 1995 2000

Ala Asn Glu Ala Val Tyr Thr Ser Trp Gln Gly Asn Pro Ile Lys Asn 2005 2010 2015

Val Tyr Glu Ser Tyr Ala Lys Phe Met Lys Asn Val Asp Phe Ser Lys 2020 2025 2030

Leu Ser Pro Glu Ala Leu Glu Ala Ile Gly Lys Ser Ala Leu Glu Tyr 2035 2040 2045

Asp Gln Arg Glu Asn Ala Thr Val Asp Asp Ile Ala Asn Ala Ala Ser 2050 2055 2060

Leu Ile Glu Arg Asn Leu Arg Asn Ile Ala Leu Gly Val Asp Ile Arg 2065 2070 2075 2080

His Lys Val Leu Asp Lys Val Asn Leu Ser Ile Asp Gln Met Ala Ala 2085 2090 2095

Val Gly Ala Pro Tyr Gln Asn Asn Gly Lys Ile Asp Leu Ser Asn Met 2100 2105 2110

Thr Pro Glu Gln Gln Ala Asp Glu Leu Asn Lys Leu Phe Arg Glu Glu 2115 2120 2125

Leu Glu Ala Arg Lys Gln Lys Val Ala Lys Ala Arg Ala Glu Val Lys 2130 2135 2140

Glu Glu Thr Val Ser Glu Lys Glu Pro Val Asn Pro Asp Phe Gly Met 2145 2150 2155 2160

Val Gly Arg Glu His Lys Ala Ser Gly Val Arg Ile Leu Ser Ala Thr 2165 2170 2175

Ala Ile Arg Asn Leu Ala Lys Ile Ser Asn Leu Pro Ser Thr Gln Ala Page 62

Ala Thr Leu Ala Glu Ile Gln Lys Ser Leu Ala Ala Lys Asp Tyr Lys 2195 2200 2205

2180

- Ile Ile Tyr Gly Thr Pro Thr Gln Val Ala Glu Tyr Ala Arg Gln Lys 2210 2215 2220
- Asn Val Thr Glu Leu Thr Ser Gln Glu Met Glu Glu Ala Gln Ala Gly 2225 2230 2235 2240
- Asn Ile Tyr Gly Trp Thr Asn Phe Asp Asp Lys Thr Ile Tyr Leu Val 2245 2250 2255
- Ser Pro Ser Met Glu Thr Leu Ile His Glu Leu Val His Ala Ser Thr 2260 2265 2270
- Phe Glu Glu Val Tyr Ser Phe Tyr Gln Gly Asn Glu Val Ser Pro Thr 2275 2280 2285
- Ser Lys Gln Ala Ile Glu Asn Leu Glu Gly Leu Met Glu Gln Phe Arg 2290 2295 2300
- Ser Leu Asp Ile Ser Lys Asp Ser Pro Glu Met Arg Glu Ala Tyr Ala 2305 2310 2315 2320
- Asp Ala Ile Ala Thr Ile Glu Gly His Leu Ser Asn Gly Phe Val Asp 2325 2330 2335
- Pro Ala Ile Ser Lys Ala Ala Leu Asn Glu Phe Met Ala Trp Gly 2340 2345 2350
- Leu Ala Asn Arg Ala Leu Ala Ala Lys Gln Lys Arg Thr Ser Ser Leu 2355 2360 2365
- Val Gln Met Val Lys Asp Val Tyr Gln Ala Ile Lys Lys Leu Ile Trp 2370 2375 2380
- Gly Arg Lys Gln Ala Pro Ala Leu Gly Glu Asp Met Phe Ser Asn Leu 2385 2390 2395 2400
- Leu Phe Asn Ser Ala Ile Leu Met Arg Ser Gln Pro Thr Thr Gln Ala 2405 2410 2415
- Val Ala Lys Asp Gly Thr Leu Phe His Ser Lys Ala Tyr Gly Asn Asn 2420 2425 2430
- Glu Arg Leu Ser Gln Leu Asn Gln Thr Phe Asp Lys Leu Val Thr Asp
  Page 63

Tyr Leu Arg Thr Asp Pro Val Thr Glu Val Glu Arg Arg Gly Asn Val 2450 2455 2460

2435

Ala Asn Ala Leu Met Ser Ala Thr Arg Leu Val Arg Asp Val Gln Ser 2465 2470 2475 2480

His Gly Phe Asn Met Thr Ala Gln Glu Gln Ser Val Phe Gln Met Val 2485 2490 2495

Thr Ala Ala Leu Ala Thr Glu Ala Ala Ile Asp Pro His Ala Met Ala 2500 2505 2510

Arg Ala Gln Glu Leu Tyr Thr His Val Met Lys His Leu Thr Val Glu 2515 2520 2525

His Phe Met Ala Asp Pro Asp Ser Thr Asn Pro Ala Asp Arg Tyr Tyr 2530 2540

Ala Gln Gln Lys Tyr Asp Thr Ile Ser Gly Ala Asn Leu Val Glu Val 2545 2550 2555 2560

Asp Ala Lys Gly Arg Thr Ser Leu Leu Pro Thr Phe Leu Gly Leu Ala 2565 2570 2575

Met Val Asn Glu Glu Leu Arg Ser Ile Ile Lys Glu Met Pro Val Pro 2580 2585 2590

Lys Ala Asp Lys Leu Gly Asn Asp Ile Asp Thr Leu Leu Thr Asn 2595 2600 2605

Ala Gly Thr Gln Val Met Glu Ser Leu Asn Arg Arg Met Ala Gly Asp 2610 2615 2620

Gln Lys Ala Thr Asn Val Gln Asp Ser Ile Asp Ala Leu Ser Glu Thr 2625 2630 2635 2640

Ile Met Ala Ala Leu Lys Arg Glu Ser Phe Tyr Asp Ala Val Ala 2645 2650 2655

Thr Pro Thr Gly Asn Phe Ile Asp Arg Ala Asn Gln Tyr Val Thr Asp 2660 2665 2670

Ser Ile Glu Arg Leu Ser Glu Thr Val Ile Glu Lys Ala Asp Lys Val 2675 2680 2685

Ile Ala Asn Pro Ser Asn Ile Ala Ala Lys Gly Val Ala His Leu Ala Page 64

Lys Leu Thr Ala Ala Ile Ala Ser Glu Lys Gln Gly Glu Ile Val Ala 2705 2710 2715 2720

2690

- Gln Gly Val Met Thr Ala Met Asn Gln Gly Lys Val Trp Gln Pro Phe 2725 2730 2735
- His Asp Leu Val Asn Asp Ile Val Gly Arg Thr Lys Thr Asn Ala Asn 2740 2745 2750
- Val Tyr Asp Leu Ile Lys Leu Val Lys Ser Gln Ile Ser Gln Asp Arg 2755 2760 2765
- Gln Gln Phe Arg Glu His Leu Pro Thr Val Ile Ala Gly Lys Phe Ser 2770 2775 2780
- Arg Lys Leu Thr Asp Thr Glu Trp Ser Ala Met His Thr Gly Leu Gly 2785 2790 2795 2800
- Lys Thr Asp Leu Ala Val Leu Arg Glu Thr Met Ser Met Ala Glu Ile 2805 2810 2815
- Arg Asp Leu Leu Ser Ser Ser Lys Lys Val Lys Asp Glu Ile Ser Thr 2820 2825 2830
- Leu Glu Lys Glu Ile Gln Asn Gln Ala Gly Arg Asn Trp Asn Leu Val 2835 2840 2845
- Gln Lys Lys Ser Lys Gln Leu Ala Gln Tyr Met Ile Met Gly Glu Val 2850 2855 2860
- Gly Asn Asn Leu Leu Arg Asn Ala His Ala Ile Ser Arg Leu Leu Gly 2865 2870 2875 2880
- Glu Arg Ile Thr Asn Gly Pro Val Ala Asp Val Ala Ala Ile Asp Lys 2885 2890 2895
- Leu Ile Thr Leu Tyr Ser Leu Glu Leu Met Asn Lys Ser Asp Arg Asp 2900 2905 2910
- Leu Leu Ser Glu Leu Ala Gln Ser Glu Val Glu Gly Met Glu Phe Ser 2915 2920 2925
- Ile Ala Tyr Met Val Gly Gln Arg Thr Glu Glu Met Arg Lys Ala Lys 2930 2935 2940
- Gly Asp Asn Arg Thr Leu Leu Asn His Phe Lys Gly Tyr Ile Pro Val Page 65

Glu Asn Gln Gln Gly Val Asn Leu Ile Ile Ala Asp Asp Lys Glu Phe 2965 2970 2975

Ala Lys Leu Asn Ser Gln Ser Phe Thr Arg Ile Gly Thr Tyr Gln Gly
2980 2985 2990

Ser Thr Gly Phe Arg Thr Gly Ser Lys Gly Tyr Tyr Phe Ser Pro Val 2995 3000 3005

Ala Ala Arg Ala Pro Tyr Ser Gln Gly Ile Leu Gln Asn Val Arg Asn 3010 3015 3020

Thr Ala Gly Gly Val Asp Ile Gly Thr Gly Phe Thr Leu Gly Thr Met 3025 3030 3035 3040

Val Ala Gly Arg Ile Thr Asp Lys Pro Thr Val Glu Arg Ile Thr Lys 3045 3050 3055

Ala Leu Ala Lys Gly Glu Arg Gly Arg Glu Pro Leu Met Pro Ile Tyr 3060 3065 3070

Asn Ser Lys Gly Gln Val Val Ala Tyr Glu Gln Ser Val Asp Pro Asn 3075 3080 3085

Met Leu Lys His Leu Asn Gln Asp Asn His Phe Ala Lys Met Val Gly 3090 3095 3100

Val Trp Arg Gly Arg Gln Val Glu Glu Ala Lys Ala Gln Arg Phe Asn 3105 3110 3115 3120

Asp Ile Leu Ile Glu Gln Leu His Ala Met Tyr Glu Lys Asp Ile Lys 3125 3130 3135

Asp Ser Ser Ala Asn Lys Ser Gln Tyr Val Asn Leu Leu Gly Lys Ile 3140 3145 3150

Asp Asp Pro Val Leu Ala Asp Ala Ile Asn Leu Met Asn Ile Glu Thr 3155 3160 3165

Arg His Lys Ala Glu Glu Leu Phe Gly Lys Asp Glu Leu Trp Val Arg 3170 3175 3180

Arg Asp Met Leu Asn Asp Ala Leu Gly Tyr Arg Ala Ala Ser Ile Gly 3185 3190 3195 3200

Asp Val Trp Thr Gly Asn Ser Arg Trp Ser Pro Ser Thr Leu Asp Thr
Page 66

### Epicentre-00005 seqlist (Nov).txt 3205 3210 3215

- Val Lys Lys Met Phe Leu Gly Ala Phe Gly Asn Lys Ala Tyr His Val 3220 3225 3230
- Val Met Asn Ala Glu Asn Thr Ile Gln Asn Leu Val Lys Asp Ala Lys 3235 3240 3245
- Thr Val Ile Val Val Lys Ser Val Val Val Pro Ala Val Asn Phe Leu 3250 3255 3260
- Ala Asn Ile Tyr Gln Met Ile Gly Arg Gly Val Pro Val Lys Asp Ile 3265 3270 3275 3280
- Ala Val Asn Ile Pro Arg Lys Thr Ser Glu Ile Asn Gln Tyr Ile Lys 3285 3290 3295
- Ser Arg Leu Arg Gln Ile Asp Ala Glu Ala Glu Leu Arg Ala Ala Glu 3300 3305 3310
- Gly Asn Pro Asn Leu Val Arg Lys Leu Lys Thr Glu Ile Gln Ser Ile 3315 3320 3325
- Thr Asp Ser His Arg Arg Met Ser Ile Trp Pro Leu Ile Glu Ala Gly 3330 3340
- Glu Phe Ser Ser Ile Ala Asp Ala Gly Ile Ser Arg Asp Asp Leu Leu 3345 3350 3355 3360
- Val Ala Glu Gly Lys Ile His Glu Tyr Met Glu Lys Leu Ala Asn Lys 3365 3370 3375
- Leu Pro Glu Lys Val Arg Asn Ala Gly Arg Tyr Ala Leu Ile Ala Lys 3380 3385 3390
- Asp Thr Ala Leu Phe Gln Gly Ile Gln Lys Thr Val Glu Tyr Ser Asp 3395 3400 3405
- Phe Ile Ala Lys Ala Ile Ile Tyr Asp Asp Leu Val Lys Arg Lys Lys 3410 3415 3420
- Lys Ser Ser Ser Glu Ala Leu Gly Gln Val Thr Glu Glu Phe Ile Asn 3425 3430 3435 3440
- Tyr Asp Arg Leu Pro Gly Arg Phe Arg Gly Tyr Met Glu Ser Met Gly
  3445 3450 3455
- Leu Met Trp Phe Tyr Asn Phe Lys Ile Arg Ser Ile Lys Val Ala Met
  Page 67

### Epicentre-00005 seqlist (Nov).txt 3460 3465 Ser Met Ile Arg Asn Asn Pro Val His Ser Leu Ile Ala Thr Val Val 3475 3480 3485 Pro Ala Pro Thr Met Phe Gly Asn Val Gly Leu Pro Ile Gln Asp Asn 3490 3495 3500 Met Leu Thr Met Leu Ala Glu Gly Arg Leu Asp Tyr Ser Leu Gly Phe 3505 3510 3515 Gly Gln Gly Leu Arg Ala Pro Thr Leu Asn Pro Trp Phe Asn Leu Thr 3525 3530 3535 His <210> 16 <211> 32 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic Primer <400> 16 32 ggcattactt catccaaaag aagcggagct tc <210> 17 <211> 37 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic Primer <400> 17 37 ggccatccat tacttcatcc aaaagaagcg gagcttc

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      Primer
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                                                                    32
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<211> 29
<212> DNA
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      Primer
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                                                                    29
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      Primer
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      Primer
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